THE POLAR TIMES

January 2012

President's Message

Fellow members of The American Polar Society, it is my great pleasure to announce preparations for APS's 75th Anniversary Meeting and Symposium, titled: "The Polar Regions in the 21st Century: Globalization, Climate Change, and Geopolitics," which will be held in New York City from May 2–4, 2012. It will be a historic and very exciting event that you will not want to miss! Since total participation will be limited to 250, I urge you strongly to make reservations as soon as possible using the information provided in the special insert or "flyer" in this issue. The symposium will begin with a welcoming cocktail party at the famed Explorers Club the evening of Wednesday, May 2, with full-day sessions on May 3 and 4, and a gala banquet to be held at the nearby Union Club the evening of May 3.

APS is joined in this very important effort by The Explorers Club and the Antarctican Society, bringing together the top authorities in the world both as speakers and participants to discuss, from as many aspects as possible, the worldwide effects of climate change in the Polar Regions, both abrupt and long-term. Dr. Lonnie Thompson, Distinguished Professor in the School of Earth Sciences and a research scientist at the Byrd Polar Research Center at Ohio State University, will be our keynote speaker. Other speakers include Dr. Paul Mayewski, Director and Professor at the Climate Change Institute at the University of Maine; Dr. Ted Scambos; Dr. Lawson Brigham; Mr. R. Tucker Scully; Dr. Don Gautier; Mr. James Balog; Dr. Kevin Schaefer; Dr. Susan Solomon; Dr. Sylvia Earle; Mr. Will Steger; and other noted Polar field scientists and explorers.

Our plans call for setting the stage such that each speaker and participant will have an opportunity to discuss, both in formal and informal sessions, various mitigation and adaptation strategies that will have to be taken by humankind, not only on its own behalf, but also on behalf of all the world's inhabitants in the decades and centuries to come.

Our 75th Anniversary Symposium and Meeting promises to be a memorable and intellectually stimulating event! Please make your reservations early and join us for what should prove to be a very important and historic event.

Alfred S. McLaren

President, American Polar Society

First APS Survey Generates Sterling Results

Nearly all of the members of the American Polar Society have been to the Arctic or Antarctica.

This is just one of the results gleaned from the first-ever APS Member Survey that was circulated last spring. We initiated the survey as part of an effort to reach out to potential corporate sponsors. Although our membership list is small, it is also highly unique. We started talking to corporations that know this and feel our uniqueness can help them. But we needed to find out just how unique we are.

Two hundred sixty members responded to the survey. That's about a 25 percent response rate, far more than most surveys typically draw. Thirty-seven percent of the respondents have been to either the Arctic or the Antarctic, while 56 percent have been to both polar regions. That means a whopping 93% of the members comprising this sample have seen one or both polar landscapes firsthand.

Here's what else we learned:

- Most of our members have a science, military, industry, or government background.
- Two-thirds have postgraduate degrees, and one-third have doctorates.
- One-third of our members are licensed professionals subject to the oversight of a governing body safeguarding the public interest—i.e., attorneys, engineers, CPAs, architects, commercial pilots, etc.
- Sixty percent of our members have published articles in scholarly or popular journals and/or books.
- More than half have taken recreational cruises to one or both polar regions.
- Ninety percent own their own homes, and more than 10 percent own businesses with two or more permanent employees.
- Fully 67 percent intend to use our dynamic new website (americanpolarsociety.org) and Facebook page to keep up with polar events and stay in touch with polar professionals and enthusiasts from around the nation and the world.

These results reflect most favorably on our organization and will help us raise funds to mount exciting new symposia, publish a 75th Anniversary issue of *The Polar Times*, continue publishing regular issues of *The Polar Times*, and inaugurate new programs while keeping dues at an affordable level.

Thanks to all the members who participated in the survey and to Merlyn Paine for designing the survey instrument. ❑

American Polar Society

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Regular membership dues are $25 a year ($35, foreign) and entitle members to receive *The Polar Times* twice a year. The American Polar Society is classified as a tax exempt organization under Sec 501(C)3 of the IRS Code. For more information about the American Polar Society, contact Charles Lagerbom, APS Membership Chair, at aps@bluestreakme.com

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Joining Our List of Supporters

The American Polar Society continues to grow, not only adding new members but new supporters as well. Our sponsors now include:

The Students on Ice Foundation

Since 1999, Students on Ice (www.studentsonice.com) has brought more than 1,800 students, teachers and scientists from around the world, as well as artists, musicians, business leaders and administrators, on educational journeys to the polar regions to heighten young peoples' understanding of global ecosystems and motivate them to protect these vital areas.

Students on Ice was founded by Geoff Green, who has led more than 100 expeditions to the Arctic and Antarctic, as well as dozens of expeditions to other remote locations. Geoff was selected last year as one of 25 Transformational Canadians. He has received a Citation of Merit from the Explorers Club, a Gold Medal from the Royal Canadian Geographical Society, and a Certificate of Special Congressional Recognition from the United States Congress.

In addition to these honors, Geoff has recently joined the Board of Governors of the American Polar Society. We're proud to have Geoff on our Board and to receive the support of his acclaimed organization.

The Kane Lodge Foundation

Kane Lodge No. 454 of the Free and Accepted Masons of the State of New York was granted its charter in New York City in 1859, two years after the death of Arctic pioneer, Dr. Elisha Kent Kane (1820-1857). Kane led two gallant and harrowing expeditions in the 1850s in search of the missing British explorer, Sir John Franklin and his crew. He conducted meteorological and geographical research in northwest Greenland, published best-selling books vividly recounting the story of his expeditions, and, in the years before the Civil War, focused the rapt attention of American readers on polar exploration in the High Arctic.

The lodge named in his honor would later enroll such distinguished polar explorers as Adolphus W. Greely, Robert Peary, Donald B. MacMillan, and Richard Byrd. The educational arm of Kane Lodge, the Elisha Kent Kane Historical Society, maintains a public gallery of polar memorabilia in Masonic Hall in midtown Manhattan. For further information about the lodge and the historical society, please see www.kanelodge454.org and www.ekkane.org.

There are few organizations that have been involved with polar lore for more than a century and a half, and are as diligent as Kane Lodge in honoring the work and accomplishments of the explorers who braved the high latitudes in wooden ships and woolen gear. We are gratified to count the Kane Lodge Foundation among our new friends and supporters.

Rolex Watch USA

Internationally recognized as the premier luxury timepiece, Rolex has been leading the watch industry since the early 1900s. Founded in London, England in 1905, the company later transferred its headquarters to Geneva, Switzerland and is now represented in 100 countries around the world and has 27 affiliates employing over 6,000 people.

Conceived as a more practical alternative to the pocket watch, Rolex was the first wristwatch to receive official chronometer certification asserting exceptional accuracy in 1910 and later developed and patented what would be hailed as the first truly water-proof, pressure-proof and dust-proof watch in 1926, fittingly named the Oyster. In 1931, Rolex developed the Perpetual rotor, a self-winding mechanism later found in every modern automatic watch allowing it to run continuously with any wrist movement winding the mechanism. Other technical innovations followed such as the automatic date change in 1945, and reaffirmed Rolex as the undisputed leader in the watchmaking industry.

Rolex watches have long been preferred by divers, explorers, mariners, mountain climbers, and aviators and have been part of expeditions to the highest and lowest points on earth. Rolex watches accompanied mountaineering legend Sir Edmund Hillary up 8,848 meters (29,029 feet) to the summit of Everest, and with submariners Jacques Piccard and APS Governor Don Walsh down to 10,916 meters (35,814 feet) in the Mariana Trench of the Pacific Ocean, the seafloor closest to the center of the Earth.

The company has also had a presence in philanthropy since 1976 with the Rolex Awards for Enterprise, an award bestowed every two years on leading innovators in science and medicine, and discovery and exploration. They also have long been associated with sponsorship of the arts, exploration, and sports including equestrian, golf, motorsports, sailing, and tennis.

Further information about Rolex is available at www.rolex.com. The American Polar Society is pleased to welcome Rolex Watch USA as a partner and supporter.

Cheesemans' Ecology Safaris

A great safari is more than remote destinations and remarkable wildlife — it is a journey woven through foreign lands and seas leading to experiences made possible through inspiration, organization, and leadership. For over thirty years, Cheesemans' Ecology Safaris has provided these unforgettable experiences during in-depth tours to the world's richest ecosystems. Their itineraries are unique and preparation is thorough, but most importantly, the leadership is exceptional. With broad backgrounds in nature and wildlife, their leaders desire to deepen your understanding of each destination so you can take away the photographs and memories that allow you to become nature's ambassador.

Gail and Doug Cheeseman have lead wildlife safaris to their favorite destinations since 1978. Inspired by his parents' passion, Ted joined them in leading safaris over 15 years ago. Now the three work together with their staff to offer you superlative nature tours to destinations such as Antarctica, Tanzania, Kenya, Bhutan, Brazil, India, Galapagos, and many more. Doug is a professor emeritus of Ecology and Zoology, Ted holds a Masters in Tropical Conservation Biology, and Gail is a naturalist of the best kind — self-taught through a lifetime in the field. Together, they are a family of truly remarkable ecologists who seek to inspire travelers to enjoy and conserve the Earth's wild landscapes.

Find out more about Cheesemans' Ecology Safaris, including a complete tour listing, at www.cheesemans.com. You can also email them at info@cheesemans.com or call 800.527.5330. ❑

Geological Society of America to Celebrate 125th Anniversary with Earth Science Antarctic Voyage

2013 is the 125th anniversary of the founding of the Geological Society of America (GSA), a venerable institution with a long history in polar science. As part of anniversary celebrations, a 25-day expedition open to the public will sail December 29, 2012, from the Falkland Islands to explore South Georgia Island and the Antarctic Peninsula. This voyage will be unique in its depth of exploration of the Scotia Arc region, studying sites of significance to geology, examining the dramatic change now visible in Antarctic glaciers and ecosystems, and visiting vast wildlife colonies such as the world's largest concentration of King Penguins on South Georgia.

To make this voyage possible, a partnership has been formed between GSA, the University of Texas at Austin's Jackson School of Geosciences, and longtime Antarctic veteran expedition operator Cheesemans' Ecology Safaris. Together they gathered an expedition lecture staff of profound knowledge, earth scientists Ian Dalziel of the University of Texas, Rob Dunbar of Stanford University, Rudolph Trouw of the University of Rio de Janeiro, and Richard Alley of Penn State (recent host of the PBS special *Earth: The Operators' Manual* and author of the book by the same name).

While the voyage can be enjoyed as a rich and dramatic tourist experience, it pioneers as an educational opportunity for the traveler looking for a deeper experience beyond the norm. Expedition staff also includes a breadth of biologists, noted explorers and historians Tim and Pauline Carr (former curators of the South Georgia Museum), professional photographers Tom Murphy and others, and wildlife artist Edward Rooks. Collectively, this voyage offers one of the most informative curriculums found on a Southern Ocean expedition, from earth science investigations to natural history walks and from guided photography sessions to wildlife illustration seminars.

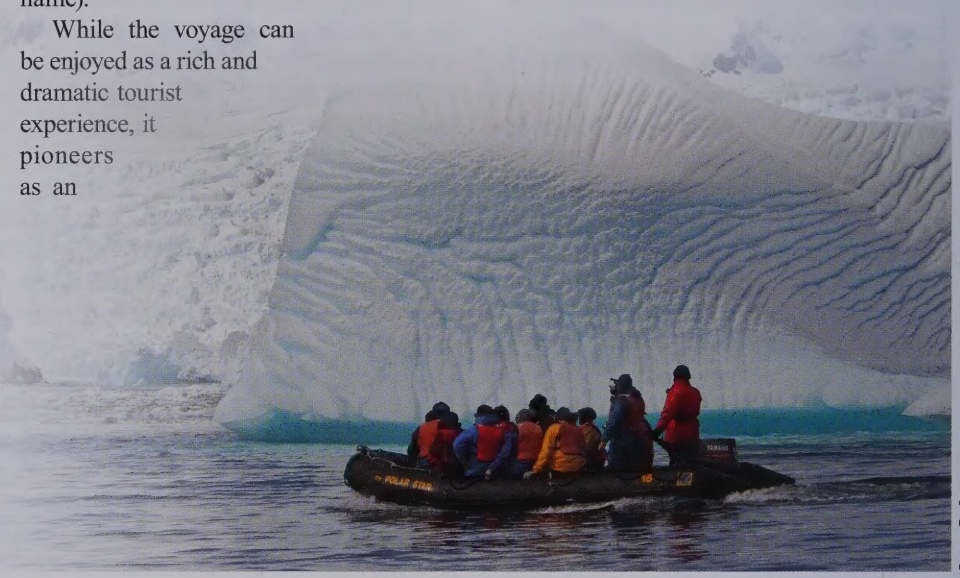

Photo by Ted Cheeseman

Cierva Cove, Antarctica

Information about the voyage can be found at www.cheesemans.com/gsa. A few spaces are still available for interested travelers. ❑

Within Our Ranks: Bernt Balchen

Bernt Balchen, a winner of the Distinguished Flying Cross, was born in Norway on 23 October 1899, later became a U.S. citizen and was known as a pioneer polar aviator, navigator, aircraft mechanical engineer and military leader. His service in the U.S. Army Air Forces during World War II made use of his Arctic exploration expertise to help the Allies over Scandinavia and Northern Europe. His early years saw service in the French Foreign Legion and Norwegian Army, and training as a boxer to represent Norway in the 1920 Olympics. He was also an expert marksman and accomplished skier. His reputation as an accomplished pilot resulted in selection in 1925 to become part of the Amundsen-Ellsworth Relief Expedition, a rescue mission for the missing explorer Roald Amundsen. On 28-29 November 1929, flying a modified Ford 4-AT Trimotor, Balchen became one of the first four men to fly over the South Pole. Balchen was chief pilot, accompanied by co-pilot Harold June, Ashley McKinley, and Commander Richard Byrd. Due to his reputation as a polar, Transatlantic and aviation expert, Balchen was hired in 1931 by Amelia Earhart as a technical advisor for a planned solo Transatlantic flight. In May 1949 he flew a Douglas C-54 Skymaster from Fairbanks, Alaska, via the North Pole, to Thule Air Base, Greenland, thus becoming the first man to pilot an aircraft over both geographic poles. He was a winner of the Harmon Trophy in aviation, as well as nine military decorations. A glacier and two mountains are named for him in Antarctica.

Balchen continued to work in consultancy until his death on 17 October 1973. He was buried at the Arlington National Cemetery, in a grave next to Richard E. Byrd. His memorial stone contains his quote, "Today goes fast, and tomorrow is almost here. Maybe I have helped a little in the change. So I go on to the next adventure looking to the future but always remembering my teammates and the lonely places I have seen that no other man saw before." ❑

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Students on Ice is an award-winning organization offering unique educational expeditions to the Antarctic and the Arctic. Our mandate is to provide high school and university students, educators and scientists from around the world with inspiring educational opportunities at the ends of the Earth, and in doing so, help them foster a new understanding and respect for the planet.

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It's Always Just One Step at a Time

by Cliff Bekkedahl, Managing Editor

[This article was published after* The Polar Times *July issue went to press.]

Reference: Wall Street Journal, 2–3 July 2011, an article by Alan Cullison titled "Russia to Deploy Troops to Defend Interests in Arctic." Mr. Cullison writes:

"Russia plans to deploy two army brigades in the north to defend its interests in the Arctic regions, where governments citing climate change have made competing claims over natural resources.

"The location will be determined, as well as weapons, numbers and infrastructure for the brigades which typically amount to a few thousand troops. They could be put in Murmansk, Archangelsk or another place, according to a Defense Minister spokesman.

"Russia has staked a claim to a large part of the Arctic arguing that an underwater ridge running from its northern Siberian shores leads directly to the North Pole. The Arctic is thought to contain as much as one quarter of the world's oil and gas reserves which makes their claims a credible basis for concern by other nations on the Arctic littoral.

"Recall that four years ago Russia planted a titanium flag on the ocean bottom at the North Pole and just recently Vladimir Putin told a party congress that Russia would build a $33 billion year around port on the Yamal Peninsula. He also is quoted as saying that 'Russia was open to dialogue with its northern neighbors, but will strongly and persistently defend its interests in the region.' "

Mr. Cullison states that Russia's claims mostly antagonize Canada and Denmark, whose ambitions most closely overlap Russia's in the Arctic. Thusly ends his article; but one wonders what might be the Russians' next step?

Perhaps, after a quiet period, we will see an "incident" wherein the Russians claim a territorial intrusion and impound fishing boats or a survey vessel. Whatever the scenario, one can be certain that there will be a next step, the Russians will push and their neighbors will ….let's see, is "dither" the right word? Or, how about, "protest vigorously" to no avail? ❑

Indigenous Resilience, Mentors and Champions of Hope for Contemporary Times

by Moki Kokoris

PHOTO © GALYA MORRELL/JOANNAMACMUSIC.COM

Utuuniaq and Ulla casting their hopeful gaze over open water of Baffin Bay.

To the Inuit, the ice is the essence of their culture and character, and they depend on it for their survival. They understand its nature, how it moves, how it retreats and expands, and it is those seasonal changes that define the Inuit spirit. To quote renowned author, Gretel Ehrlich, who lived among them for many years, "They have no illusions of permanence. There is no time for regret. Despair is a sin against imagination."

Drawing on collective experience, observation and knowledge handed down from one generation to the next, the indigenous peoples who inhabit the territories across the Arctic are able to not only recognize subtle changes in their environment, but they can offer vital insights into the causes.

It is crucial to view the issue of traditional knowledge from its more apropos perspective, in that the indigenous peoples are not primitive tribes whose lifestyles we have the responsibility to preserve, but to the contrary. We in the modern and seemingly more civilized world, would do well to adopt some of the age-old wisdom employed by the aboriginal populace that existed sustainably for thousands of years before the Industrial Revolution changed the world — ours and theirs.

In a global system, where everything is interconnected, it is important to remember that the environment, the economy, foreign policy, global health and sustainability are not separate concerns, but that each of these domains has a profound effect on all of the others. The Arctic is the planet's barometer, and because the impacts of climate change are felt there more immediately and dramatically, its indigenous cultures are facing unprecedented challenges.

While the same could be said for all the peoples of the Far North, the Inuit, who view themselves as the early warning system for the rest of the world, have become a symbol of adaptation and cultural survival. Their resilience, however, is now being tested as they confront conditions beyond their capability to control. The rules have changed, and even the elders are themselves uncertain of what wisdom they should pass on to the younger generation.

On the Cumberland Peninsula on the eastern coast of Nunavut's Baffin Island is a national park called Auyuittuq. In the Inuktitut language spoken in the region, auyuittuq means "land that never melts." Yet in 2008, the permafrost in the park and surrounding area thawed, and heavy rains washed away the soil down to the bedrock, ravaging not only the park but a few small communities nearby. In recent years, ice conditions have become increasingly unpredictable, altering animal migration patterns, and leaving the residents unable to cope with changes so profound that they undermine Inuit ideals of patience and resolve. The stories are very similar all across northern Canada.

For Sheila Watt-Cloutier, an Inuit activist, these events are categorical evidence of global warming, and few people have done more than she to champion the rights of those whose lives are threatened by the changes in the world's climate. Born in Kuujjuaq, Nunavik, Ms. Watt-Cloutier grew up deeply rooted in her native culture, and soon after receiving degrees in education and human development, she became a formidable leader in Nunavik. In 1995, she was elected

PHOTO: COURTESY OF THE ICC

Nobel Peace Prize nominee and "Arctic Emissary" Sheila Watt-Cloutier is the voice of the Inuit people and a world leader on global climate change and human rights.

President of the Canadian branch of the Inuit Circumpolar Council [ICC], which thrust her into the national and eventually the international arena. In 2007, she was nominated for the Nobel Peace Prize for her advocacy work in linking the impacts of climate change with human rights.

Well known for her focus on solutions, one of her objectives is to change public opinion into public policy. Ms. Watt-Cloutier played a key role in negotiations at the United Nations to ban a class of poisonous chemical pollutants that have been accumulating in Arctic waters and subsequently showing up in breast-milk of Inuit women. As later Chair of the multinational ICC that represents the 150,000 Inuit living in Canada, Greenland, Russia and the United States, she petitioned the Inter-American Commission on Human Rights with a claim that unchecked emissions of greenhouse gases from the United States violated Inuit cultural and environmental human rights.

Ms. Watt-Cloutier's main mission is to put a human face on climate change. In her own words: "Most people can't relate to the science, to the economics and to the technical aspects of climate change. But they can certainly connect to the human aspect. The key is to move the issue from the head to the heart." It is her Arctic voice and the individual stories she shares that enlighten and inspire.

Storytelling is a critical element in the passing down of indigenous traditional wisdom from one generation to the next, but if also imparted from one culture to another, stories can teach us to think differently. Initially presumed to be erroneous, but later authenticated, one particular account that is a testament to the tenacious adaptability of the Inuit people is well worth retelling. It is a narrative shared by noted Canadian anthropologist and National Geographic Explorer-in-Residence, Wade Davis, in his book titled "The Wayfinders | Why Ancient Wisdom Matters in the Modern World."

As Wade Davis relates, "The Inuit did not fear the cold: they took advantage of it." Before other materials became more readily available, the fact that runners of their sleds were originally made of fish wrapped with caribou hides proves the point. During the 1950s, in the process of establishing their sovereignty in the region, the Canadian government forced the Inuit people into settlements. Because the grandfather of one of these displaced Inuit families refused to stay in the new dwelling, the family was forced to take away all his tools and weapons, which would prevent him from being able to sustain himself on his own. Unthwarted by his family's restrictions, the man slipped outside, and at some distance away from the structures, he pulled down his sealskin pants and defecated into his hand. As the feces started to freeze, he shaped it into a blade, and then added a sharp edge from his own saliva. Once this 'knife' froze solid, the man butchered and skinned a dog with it, he fashioned a harness out of the dog's hide, improvised a sled using its rib cage, harnessed a second dog to this new 'sled,' and disappeared into the Arctic night. "Talk about getting by on nothing!" Wade Davis ends.

PHOTO: © GALEN MORRELL/UMMANNAQMUSIC.COM

The glowing Inuit smile of Jaakuaraq — a great hunter from Uummannaq.

Indeed this story is a perfect example of human imagination combined with traditional knowledge that is brought into being by culture borne both from and by the environment to which these people are so closely connected. It proves that all humans of all cultures, ancient or contemporary, possess the power to adapt and change. Therein lies hope for the future, not only for the Inuit people, but for the rest of us — as long as we are willing to listen, learn and understand the value and providence of their wisdom. ❑

PHOTO: COURTESY OF ISUMA PRODUCTIONS

Traditional Inuit whip: bone stock handle, rawhide keeper, and leather thong tail.

PHOTO: © GALEN MORRELL/UMMANNAQMUSIC.COM

Traditional polar bear fur clothing.

Tribeca, Treasure, Progress, Tradition

by Cliff Bekkedahl

Photo by Mike Sabak

Richard Nonas in his Tribeca workshop.

The Japanese have a wonderful tradition of honoring outstanding individuals for artistic and intellectual lifetime achievement by designating them as National Treasures. Too bad we don't, but if we did, bingo! I have a candidate! This thought hit my mind the moment I stepped into the studio-workshop of Richard Nonas, sculptor and craftsman extraordinaire.

What a find, what a place — 14 Harrison Street in the now upscale section of lower Manhattan called Tribeca. Once in the shadow of the World Trade Center, it is one of the early 1900s buildings in that area that originally housed the wholesale and retail outlets for nuts, dried fruit, coffee, specialty grains and like commodities that served the city and eastern seaboard through the first half of the twentieth century. Gentrification began about two decades ago, and Richard's workshop and places like it are being overrun by chichi restaurants and high-end specialty retail operations. He will hang in there, but a successor or following hands-on creative use of the site is unlikely. Such is progress.

Richard Nonas is a sculptor by profession, an anthropologist by education, ethnologist in the field, teacher and — to the amazed visitor — a skilled craftsman who builds Inuit kayaks as an avocation. A display of his kayak building skills can be seen hanging on the wall of his workshop in the accompanying photo. These are not scale models but, rather, working replicas built to exacting measurements from carefully researched historical records for each craft. Inuit kayaks are not one-size-fits-all watercraft. Instead, each is built for a specific purpose such as whale or walrus hunting, sealing, or fishing, while others are used for long-haul traveling. It can be seen from the collection displayed that the bows of the kayak are often shaped to contend with sea conditions prevalent in the builder's locale.

The hand-built kayaks shown in the photo are approximately 18 feet long and weigh 25± lbs. The frames are wood, fastened together by leather lashing and wooden pegs. The covering is the only deviation from original material which, for the Inuit builder, would be sealskin. Barred by law from using seal skins, Richard uses a nylon material impregnated with a polymer product that, combined, replicate the characteristics of sealskin—waterproof, flexibility, tensile strength and resistance to tears or abrasion.

As Richard was describing the construction of kayaks, I wondered where the Inuit might obtain wood for building these sea-faring crafts as well as other conveyances they use, such as dog sleds. The Inuit live well north of the tree line and rarely venture very far south. Richard explained that the Inuits have only the vaguest concept of live trees, but they find wood for their needs in the enormous quantities of driftwood that wash ashore on the beaches of northern Alaska, Canada, the countless islands in the Baffin region and further east, on the shores of northern Greenland. Next question: Where might this volume of driftwood originate? Richard answered, "Siberian rivers emptying downed trees into the Arctic Ocean and drifting, perhaps for years, before washing up on the opposite shores of the Arctic." A plausible explanation, especially since there are few northbound rivers and streams emanating from North America and Greenland that could carry downed trees to the Chukchi and Beaufort seas or to the northern Canadian shores or Baffin Bay areas.

Tradition! Will the art of kayak construction be passed on to future generations of the northern indigenous people? Perhaps; but "doubtful" is a more plausible possibility. Only a few days before my meeting with Richard, I was handed a *New York Times* clipping with a Barrow, Alaska, byline. The article described a recently authorized whale hunt and kill. Early one morning, hunters in a small but fast motorboat closed in on a spouting bowhead whale, fired an exploding harpoon into the 28-foot-whale and then hauled the dead beast close to shore, where a line was connected, and the whale was towed ashore by a bulldozer. A crew armed with chain saws quickly cut the whale apart and distributed the meat, blubber and other sections to the waiting families and friends. A second whale was dispatched with the same efficiency, later in the day. No kayaks could be seen in the half-page photo of the whale dismemberment site, but many pick-up trucks, boat trailers and a front-end loader were lined up in the background. Tradition? ❑

More information is available via the following:

- Google Richard Nonas to learn more about his art.
- Google Harvey Golden to learn more about the history of kayaks of Greenland.
- Google Qajaq [Inuit for kayak] a journal for kayak builders and paddlers.

U.S. May Need Icebreakers

Global warming spurs debate about whether to increase polar fleet

***Seattle Times*, 11 October 2011, WASHINGTON, by Kyung M. Song** — Climate change is melting parts of the ice-locked Northwest Passage. China is building its first modern icebreaker in hopes of staking claims to Arctic waters. Frigid polar regions are opening up to increased shipping traffic, scientific exploration and tourism.

Yet the United States is so short of icebreakers capable of navigating those still unpredictable waters that since 2007 it has made the annual supply run to McMurdo Station, the American research outpost in Antarctica, with a ship leased from Sweden.

The nation's two heavy-duty U.S. icebreakers sit sidelined in Seattle, home of the Coast Guard's three-ship icebreaker fleet. The *Polar Sea* and its twin, the *Polar Star*, are 1970s-era cutters that have been patched up to keep going past their original life span.

The only working icebreaker is the 12-year-old *Healy*, which boasts elaborate scientific labs but can break through only thinner ice.

This week, after years of hand-wringing over the nation's diminished Arctic ambitions, Congress will receive what is meant to be the definitive independent analysis on whether it should build new icebreakers or eke even more service out of the two aged vessels.

Paradoxically, experts say, the thinning ice will increase demand for icebreakers as more people flock to the hazardous polar environs.

A National Research Council panel in 2006 concluded the nation's icebreaking capabilities were inadequate to support its polar missions and urged immediate construction of two ships.

Another independent study by ABS Consulting in 2010 said the Coast Guard would need three each of heavy and medium icebreakers — double its current fleet.

Regardless of the latest recommendations, Sen. Maria Cantwell, a Democrat from Washington state, is trying to block the service from carrying out a plan she believes would put the United States even further behind - mothballing the 33-year-old *Polar Sea* and raiding it for parts.

She has co-sponsored a bill authored by Sen. Mark Begich, D-Alaska, to prevent the service from decommissioning the *Polar Sea* before the *Polar Star* returns to service in 2013.

The latter ship is undergoing a four-year, $57 million overhaul at Vigor Industrial on Harbor Island in Seattle. The work will add seven to 10 years to the ship's life.

Cantwell argues that with a fleet containing only one currently working icebreaker, the Coast Guard can't afford to junk the *Polar Sea*, as decrepit as it may be. Constructing a new icebreaker could take a decade and as much as $1 billion, money that Congress is unlikely to approve anytime soon.

Until that happens, Cantwell said, yanking the *Polar Sea* from service would leave the Coast Guard with no backup heavy icebreaker.

The 60,000-horsepower *Polar Sea* was refurbished in 2006, but its engines failed in June 2010. The Coast Guard hasn't fixed the engines because it would cost $22 million and wouldn't extend the *Polar Sea* 's current service-end date of 2014, said Commander Christopher O'Neil, a Coast Guard spokesman in Washington, D.C.

Icebreakers use their thick steel hulls and overhanging curved bows to bust through ice. The *Polar Sea* and *Polar Star* can easily break six feet of ice at three knots, and 21 feet or more by backing and ramming.

The *Healy*, which has half the horse power and needs about half the crew, can break four and a half feet of ice going forward.

The state of American capacity to ply frozen waterways has long caused alarm.

Thanks to warming polar climates, what was ice now is sometimes water. Some scientists believe the Northwest Passage, which links the Pacific and Atlantic oceans via Canada's Arctic archipelago, could become ice-free during summers within this century.

That would open a shipping lane that would be days or even weeks shorter than traversing through the Panama Canal.

The result is more traffic — and more potential trouble, said Jeffrey Garrett, a retired Coast Guard rear admiral. ❑

Due North

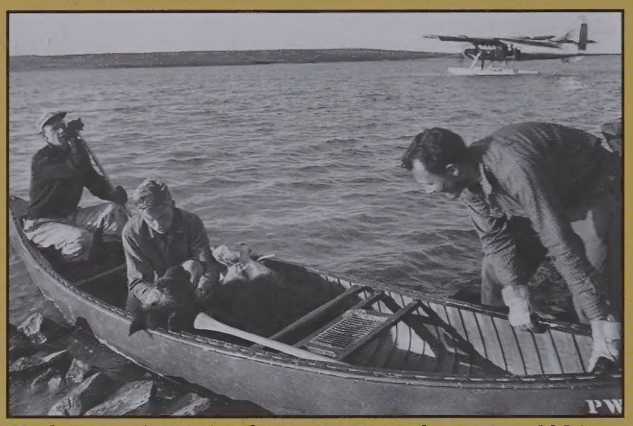
by Moki Kokoris, Arctic Editor

The plan was to write my "Due North letter from the Arctic Editor" as I always have, occupying my customary 50 percent of this real estate, but it didn't quite work out that way.... I trust that those of you who are devout cover-to-cover perusers of this prestigious publication have noticed the absence of an installment by my partner-in-Arctic-crime. It pains me to report that our beloved boreal friend and colleague, Herb Drury, whom I dubbed Sir Musk Ox Wrangler after he shared his personal escapades with me, is facing the most difficult challenges of his life. The health gods have not been very kind to Herb lately as he is currently wrangling not musk ox calves but cancer, and doing so with emergency double bypass surgery during recess.

After learning of my personal obsession with the *Ovibos moschatus*, and as part of my initial bonding experience with Herb, he shared that he was party to the musk ox capture expedition for what eventually became the first domesticated herd of musk oxen from which *qiviut* would be harvested. That expedition was in 1954, with John Teal and Lansing Holden. Not only did Herb offer me the privilege and honor of befriending someone whose early exploits were fundamental to "musk ox husbandry history," he also handed down to me much of his background material on the topic, among which was his extensive thesis monograph, a treasure well worth cherishing.

I am certain that all of you will join me in sending His Honorable Sir Musk Ox Wrangler of Arcticshire our collective healing energy. From me, his humble *qiviut* squire, he will forever have my heartfelt gratitude and deepest respect for exemplifying the true definition of dignity and courage. *"The bravest are surely those who have the clearest vision of what is before them, glory and danger alike, and yet notwithstanding, go out to meet it."* — Thucydides

Now to a more formal note to drum up even more enthusiasm and much ado about our upcoming Symposium in celebration of the 75th anniversary of the Society's establishment and of its journal *The Polar Times*. (There are job openings for cheerleaders, by the way. Apply within. The wearing of balaclavas and mukluks with the uniform will be obligatory.) In collaboration with the Explorers Club and the Antarctican Society, and with our illustrious President Capt. Fred McLaren in command, many of our Governors, Officers and other tireless member volunteers have been all aflurry with the planning of this significant meeting, which will be held in New York City on May 2-4, 2012. Its title "The Polar Regions in the 21st Century: Globalization, Climate Change and Geopolitics" reflects the importance and relevance of the major concerns that are representative of the very core of our Society's mission.



Herb Drury (center) calms a young musk ox, circa 1954.

As this issue goes to press, details for this Symposium are being finalized and will soon be released to all potential attendees. The flyer insert shows a nearly complete list of speakers, all renowned in their respective fields of polar expertise, and of topics that will be presented during the three days of proceedings. We are most grateful and thrilled to count Rolex, Students on Ice, the Kane Lodge Foundation, and Cheesemans' Ecology Safaris among our growing list of generous sponsors and supporters, without whom the meeting and the forthcoming 75th anniversary edition of *The Polar Times* would not have been possible. All of us invite all of you to join us at this milestone event, which will offer its audience a state-of-the-art forecast for the next 75 years in a world influenced by the destiny of the Arctic and Antarctic. I look forward to seeing you there! With such an impressive line-up of presenters, you will leave duly impressed and inspired! That is guaranteed... .

With the intent of ending my missive with a bit of Arctic trivia you are welcome to share at your next soirée, I present the following intriguing anecdote. In my research for this issue's indigenous Arcticle, I came across an Inuit mythological creature not previously known to me. It is the not necessarily congenial Ijiraat. While there are conflicting theories about their misunderstood nature — some elders thinking of the Ijiraat as malicious beings, others viewing them as Inuit messengers — these land spirits are believed by all to be shape-shifters who transform themselves into Arctic animals — most often wolves, bears or ravens. Regardless of the chosen form, the singular trait that always gives away the Ijiraat's disguise is their fiery red eyes. Many Inuit warn that these spirits are often surrounded by mirages, so when mountains or islands on the horizon appear closer or larger, this is the suspected work of an Ijiraat. Although many interpretations of this mythological being exist, one thing is certain: Following a brush with an Ijiraat, people tend to experience memory loss, quickly forgetting the details of what happened. Therefore, be forewarned: should you ever encounter an Ijiraat, remember to talk to as many people as possible before... um... wait... what day is it again? Can I have a pony for my birthday? Mommy? ❑

Ijiraat illustration © The Inuit Myths Project — Qikiqtani Inuit Association

In Good Company

The American Polar Society (APS) is pleased to announce that Rolex Watch U.S.A., Inc. has joined us as a major sponsor of APS's 75th Anniversary Meeting & Symposium, "The Polar Regions in the 21st Century: Globalization, Climate Change and Geopolitics," May 2–4, 2012, in New York City.

Rolex Watch U.S.A. has long identified its distinguished brand with individual enterprise, exceptional achievements, and pioneer projects that address matters of vital importance to the world and advance human knowledge and scientific understanding. We are honored that Rolex will be joining forces with the American Polar Society, The Explorers Club, and the Antarctican Society to explore the potential worldwide effects of the environmental changes underway in the high latitudes. With Rolex as an active partner in this endeavor, we are looking forward to presenting in the media capital of the world a landmark event that will:

- Synthesize views of researchers, administrators, and explorers projecting the future of the Polar Regions from different perspectives.
- Provide a unique forum for science to inform the discussion of economic and geopolitical linkages, and for policy issues to raise the horizons of researchers in various scientific disciplines.
- Disseminate information to the policy and scientific community, and the public.

Capt. Alfred McLaren, USN (Ret) in center, with Stewart Wicht, President and CEO of Rolex Watch USA, Inc. (left), and Peter Nicholson, Vice President, Director of Communications, also of Rolex Watch USA, Inc., at the Explorers Club during Rolex Watch USA's Lowell Thomas Awards dinner in St. Louis, Mo., 15 April 2011.

- Clarify alternatives, solutions and mandates for action
- Raise the profile of The American Polar Society as a voice of the wide-ranging polar community.

We greatly appreciate the faith that Rolex Watch U.S.A. has shown in the American Polar Society and our president, Captain Alfred S. McLaren and will strive to justify their support by doing all that we can to organize the 75th Anniversary Symposium with the same artistry, attention to detail, and clockwork precision that consumers the world over have come to expect from a Rolex timepiece. ❑

Within Our Ranks: Robert H.T. Dodson

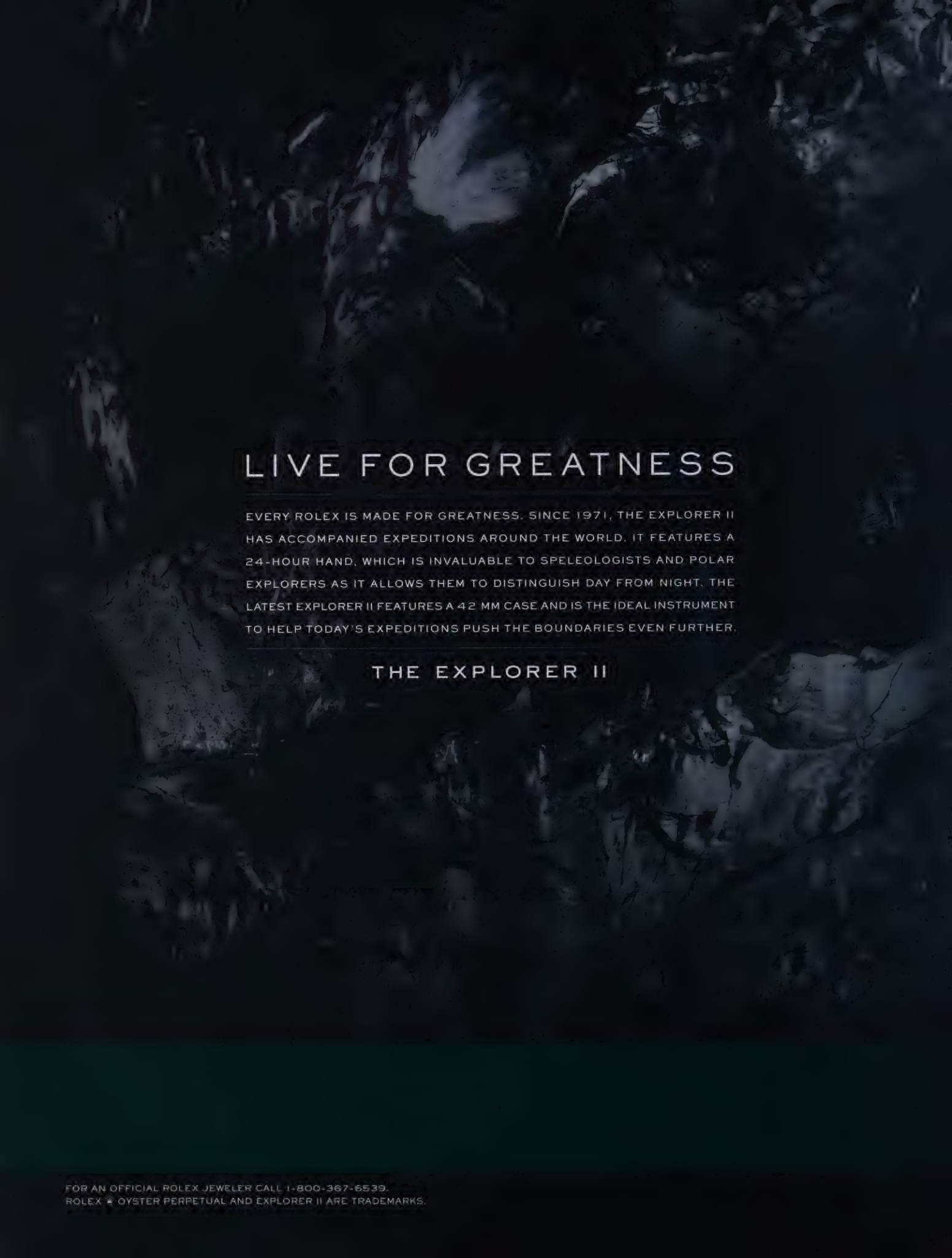
Bob Dodson was a member of the Ronne Antarctic Research Expedition (RARE), 1947–48, in which the objective was to explore the little-known region at the head of the Weddell Sea from a base at Stonington Island, Marguerite Bay. His expedition label was Assistant Geologist, Surveyor, and Trail Man. Dodson was the youngest member of the expedition, at 21 years, and was inspired about Antarctica in part by his early acquaintance with the news of the Byrd expedition when he was 6 years of age, and a view of Amundsen's boat *Gjoa* when he was 8. He received Bachelors and MBA degrees from Harvard, and a Masters Degree from the Centre d'Etudes Industrielles in Geneva.

Dodson's father aided Finn Ronne in obtaining a ship for the trip, the Port of Beaumont, giving Dodson a secure spot on the expedition. Upon arrival in Beaumont, Dodson and Art Owen were put in charge of the dog teams.

A suitable location for the expedition was East Base, used in the U.S. Antarctic Service Expedition (USASE), 1939–41, on Stonington Island. One of Dodson's major assets was that of jack-of-all-trades — in addition to his other duties he also tested equipment for the Quartermaster Corps of the Army, and hunted Weddell seals to be used for food and fuel for the winter.

A life-threatening incident developed when Dodson and Pete Peterson returned to base camp from the establishment of a remote weather station following a period of poor weather, and Peterson fell head first into a crevasse to a depth of 110 feet. Dodson saved his life by hurrying to camp and reporting the incident, and a rescue party went to the scene and raised Peterson, after he had spent 12 hours upside down.

The geographic feature "Dodson Peninsula" is named for Bob, located on Orville Coast, adjacent to the Ronne Ice Shelf. ❑



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The Recovery of Juliet Delta 321 (Part One)

by Jim Mathews

Photo courtesy Jim Mathews

On December 4, 1971, a US Navy LC-130 aircraft, Bureau Number (BUNO) 148321, call sign Juliet Delta (JD) 321, crashed on departure from site D-59 in east Antarctica. Two jet-assisted takeoff (JATO) bottles detached from the fuselage during take-off, destroying the #2 engine's propeller and gearbox, and damaging the #1 engine. Just airborne, the pilot managed to level the aircraft and decided to land immediately, which almost certainly avoided a far worse outcome. The emergency landing and rough surface collapsed the nose landing gear before the aircraft came to a stop. No passengers or crew were injured.

JD 321 would not move again until December 25, 1986.

Prior to the accident, 321 had delivered supplies to a French traverse party en route from Dumont D'Urville to Vostok. The French party remained at the crash site with the flight crew and passengers for three days while they awaited rescue from McMurdo, which was delayed by bad weather. After the rescue aircraft arrived, a Lockheed representative and VXE-6 maintenance team inspected 321 and concluded that, because of the remote and inhospitable location, the aircraft should be declared a "strike" — i.e., total loss, and removed from the US Navy inventory. Flight instruments, engine gauges, radios and navigation equipment were hastily removed, and 321 was abandoned to the snow.

Press reports of the accident generated some unexpected interest. In early 1972, a contractor in Canada contacted the Navy about acquiring salvage rights to 321. Of greater concern in the Cold War political environment, other national Antarctic programs were aware of the downed aircraft, which represented a unique US capability in Antarctica and one that, without title protection, would be transferred to a foreign country able and willing to retrieve it. This could lead to diplomatic conflict and provide an unwelcome means to circumvent the export restriction on the LC-130 model. In early 1974, the US Navy reclaimed title to 321.

The question then was how to go about a recovery operation. D-59 was a difficult location. The nearest support base, the French station Dumont D'Urville, was 150 miles away and lacked a prepared landing area. The crash site, on the edge of the polar plateau and at an elevation of over 7300', featured large, hard sastrugi, the product of katabatic winds from the continent's interior. A skiway had to be constructed so flights carrying normal payloads could safely land, which meant that a surface traverse was needed beforehand to transport snow-grooming equipment.

The only US program experience at D-59 (the "D" stands for "drapeau," the French word for flag, and "59" is a 10-kilometer marker flag along a 800-kilometer traverse route) was colored by the immediate aftermath of the crash. The weather at the time was not good, the aircraft crew was in a survival situation, and the terrain was bleak and hostile. Moreover, the French, who knew the area well, reported that a rough surface and bad weather were typical.

Photo courtesy Jim Mathews

As a result, D-59 began to acquire a mythic reputation. One report called the site conditions "inhuman." Other accounts described rock-like snow formations, winds that never dropped below 20 miles per hour or summer wind chill factors in excess of -100°F. Such descriptions were compounded and embellished over the years, and these impressions were reflected in future recovery plans.

The surface conditions, at least, were confirmed in November 1974 when an LC-130 carrying the commander of the Naval Support Force (CNSFA) and the VXE-6 commanding officer flew over the site and dragged its skis. The force of impact was unsettling and any thought of landing was dismissed.

A couple of months later, two LC-130s crashed-landed at Dome C, another location in east Antarctica with terrain somewhat akin to D-59. Thus, by the end of January 1975, three of the US Antarctic Program's seven LC-130s were marooned on the Antarctic icecap.

Loss of three aircraft in as many years would have severely diminished US activities in Antarctica, so detailed plans were developed to recover the two at Dome C during the following season. Although higher than D-59, Dome C was farther inland, with generally clear skies and low winds during the summer. A substantial camp was built at the site, and a full complement of aircraft technicians and the required parts were flown in. Both aircraft — one of which required a wing replacement — were repaired and returned to service over two seasons. The success of this effort demonstrated the feasibility of recovering 321.

In the six years since the crash, most of 321 had been buried by drifting snow. The French noted the increasing coverage during their traverses and by early 1978 only the prop tips and vertical and horizontal stabilizers remained visible. However, the US finally managed to re-inspect the aircraft after a US Navy Seabee (Chief Hall) accompanied a French traverse and led construction of a skiway at the site. An LC-130 carrying several Lockheed and Navy engineers to evaluate 321 was then able to land at D-59. The damage was determined to be less than originally thought. The engineers recommended recovery, and a full-scale effort was planned for the following year.

Over the next few years, budgetary and operational problems prevented action, and interest in the project waxed and waned. Also, the folklore surrounding D-59 influenced discussion. If the site really were a kind of polar maelstrom, then the recovery would require "heroic" work and complex support.

Extensive plans, developed during the late 1970s and early 1980s, incorporated these beliefs. A camp population of 40 to 50 or even more people was envisioned; heavy equipment would be transported to the Adelie Land coast — by icebreaker if necessary — and heavy-lift helicopters might be requisitioned. And, each perceived requirement would have to be coordinated through multiple agencies and reviewed by a hierarchy of decision makers before anything could happen.

In the meantime, nature was taking its course. By 1983, all of 321 except for its tail was buried in compacted snow. A year later, another LC-130 was temporarily trapped in Antarctica when its skis penetrated a crevasse while taxiing on a glacier. The Navy promptly repaired the aircraft, and this success rekindled interest in 321.

Although there was little similarity between the two projects other than that they involved the same type of aircraft, both VXE-6 and NSFA expressed a renewed desire to go after 321. This desire was supported and endorsed by the new director of NSF's Division of Polar Programs, Peter Wilkniss.

Originally from Germany, Wilkniss exhibited a certain Teutonic focus when he learned the background of 321. For whatever reason(s), the project appealed to him, and he requested NSFA to plan for its recovery during the 1985–86 season.

NSFA completed a plan, but the enthusiasm had dissipated. VXE-6's command structure, in particular, seemed to recognize that the project was too difficult, and although the French (accompanied by Rob Flint) traversed to D-59 in late 1985 and prepared a rudimentary skiway so another inspection could be made, no LC-130 would land.

Finally, in April 1986, the new CNSFA, Captain David Srite, sent a report to Wilkniss in which he declined to pursue recovery of 321. In light of what would eventually happen, Srite's report was said to have made the Navy "look bad." In fact, it was a fair, reasoned argument against the effort, based on the operational approach that the Navy would take. Military command and organizational protocols would dominate, and the resources brought to the project would be those required for a multi-year "task force" composed of different units, outside specialists and supplemental Navy manpower. NSF would be unlikely to fund such an operation, and although the report repeated some D-59 folk tales, Captain Srite's entirely valid point was that no one knew the present condition of 321, which at that point was 26 years old and had essentially disappeared from view.

Peter Wilkniss did not receive the report well. His interest in 321 was by then a fixation, and NSFA's refusal a political test of will. He instructed his staff to "find another way." ❑

***To be continued in the July 2012 issue of* The Polar Times**

Photo courtesy Jim Mathews

U.K. Antarctic Heritage Trust: Preservation of History in Antarctica

by Eleanor Land, UKAHT

Photo by John Splettstoesser

Buildings of Port Lockroy, former British base dating to the 1940s, now restored and open for tourists. Sierra DuFief mountains in the background (highest at 1,415 m) are on Wiencke Island, southern Gerlache Strait. Port Lockroy is designated by the Antarctic Treaty as Historic Site & Monument No. 16, and is managed by the UK Antarctic Heritage Trust. It is the most heavily visited location by tourists in Antarctica.

What do Neil Armstrong, Buzz Aldrin, Bill Gates and a Gentoo penguin have in common? They have all visited Port Lockroy on the Antarctic Peninsula, a living museum clinging to an outcrop of rock which welcomes thousands of visitors each year to tell the story of early Antarctic endeavour...

On the Western side of the Antarctic Peninsula stand several small wooden huts, barely visible against the rock and snow, yet each protected under international law for their valuable role in furthering man's knowledge of Antarctica.

Blasted by katabatic winds of over 100mph, buried in snow and cut off by sea ice for six months of the year, these tiny buildings are some of the only evidence that remains of Antarctica's unique heritage of exploration and discovery.

Each is a former British base, built in the middle of the last century, and once busy with geologists, botanists and physicists working to learn more about the great white continent. The science carried out at these early bases has contributed hugely to our understanding of the polar natural world. Glaciologists, meteorologists and cartographers all carried out pioneering work in these small huts, often working alongside other countries as part of the International Geophysical Year of Cooperation in 1957, laying the foundation for the principle of scientific collaboration which governs Antarctica today. Closed a few decades later, largely due to the establishment of more modern research stations elsewhere , the huts now stand as time capsules from this period, uninhabited, preserved on the ice.

In recognition of their historic significance, seven British huts on the Peninsula have been designated Historic Sites and Monuments under the Antarctic Treaty, ensuring they cannot be damaged, removed or destroyed. Yet, if left as they are, these fragile buildings and their contents are at risk, exposed each year to some of the harshest winter conditions on Earth.

In an effort to protect them, four of these huts (Port Lockroy, Damoy Hut, Wordie House and Detaille Island) have been placed under the custodianship of the UK Antarctic Heritage Trust, a British charity established to care for and preserve the huts for generations to come and to inform and educate people about Antarctic heritage at large. In 1994 the Trust commissioned a conservation survey of the abandoned bases that formed the basis for future action, and determines the nature of the work the Trust carries out today.

To visit the huts is an extraordinary experience. They are silent, beautiful in their simplicity and solitude, and yet they speak poignantly of the men who once occupied them — their lives woven into the very fabric of the buildings, their scientific equipment left untouched, signs of domestic life still evident in the possessions they left behind.

One hut, however, has recently returned to life during the Austral summer to tell its story, opening for a few months each year to offer visitors a glimpse of early Antarctic endeavour. Base A at Port Lockroy was the first British base to be established on the Antarctic Peninsula, and under the Trust's careful management has been restored to its original condition.

Stepping inside the building at Port Lockroy, the past suddenly comes alive: the gramophone crackles with wartime songs, tins of cocoa powder and marrowfat peas line the shelves of the old kitchen and warm sheepskin fleeces offer comfort on the hard wooden bunks. In the radio room, the tap-tap of Morse code cuts through the thick fizz of static reception, and in the science room tiny bottles of inks and dyes stand neatly alongside meteorological equipment and a prized Ionosonde — a machine which recorded the first Antarctic sounding of the ionosphere — leading to the fundamental discovery of what we recognise today as the hole in the ozone layer.

More than 13,000 people now visit Port Lockroy each year, each sensing firsthand the experiences of the early scientists on the peninsula. And with relics on display from its earlier history as a whaling station and as an anchorage for sailing ships, a visit to Port Lockroy offers a richer experience still. The hut is now manned by a small team of four or five seasonal staff, who live on base and carry out essential maintenance work during the summer. Life on

base today does not differ too greatly from the early days of operation. There is no mains electricity or running water, no internet connection or fresh food; until very recently the small team living on base slept and ate in the original bunkroom, using VHF radio as the main line of communication. Port Lockroy is, in the truest sense of the word, a real 'living museum'.

Outside the hut, visitors are kept company by a colony of two thousand noisy but friendly Gentoo penguins which nest on the nearby rocks. The penguins return to Port Lockroy each year to mate, care for their clutch of eggs and nurture their chicks until they have fledged. As the most visited site in Antarctica, Port Lockroy is in a unique position to monitor the impact of tourism on penguin colonies, and gathers data on the breeding success of the penguins each year as part of a long-term programme of assessment.

Port Lockroy is the Trust's flagship project, and it carries the survival of its sister peninsular bases on its shoulders. In order to raise funds to preserve the bases and carry out the crucial maintenance work they desperately need, Port Lockroy also operates a post office and souvenir shop. The post office and shop now sit in what was once the engine room for the base, and are a source of valuable income for the Trust. When each base was built, an official post office was established alongside it, with special stamps produced for the occasion; the reopening of the post office when Port Lockroy was opened to the public generated much philatelic interest and provides not only a connection between past and present, but a connection to the outside world — without email, postcards and letters are often the only means visitors have of communicating with friends and family back home, often taking months to arrive and providing a record of their own visit to this unique place.

Port Lockroy is the jewel in the crown of the Trust's work to date, but much more remains to be done. Over the last two seasons, skilled teams of carpenters and conservators have carried out vital structural work and artefact preservation at several of the other bases, namely Damoy, Wordie House and Detaille Island, to make them structurally sound and weathertight. Plans are currently being prepared for future work at the British huts on Horseshoe Island and Stonington Island (named after Stonington, Connecticut, and also the site of the East Base of the United States Antarctic Service Expedition). It is hoped that Stonington will provide a first-time opportunity for collaborative efforts between the UK and the US, to ensure each country's heritage is captured and preserved.

Last season, the Trust oversaw the important rebuilding of the old Nissen hut at Port Lockroy, which once stood on the island as a storehouse. The reconstructed Nissen hut is now fully insulated and used as separate (and warmer) staff accommodation. The original bunkroom has been restored to its former appearance, and completes the authentic visitor experience.

It is this seamless connection between past and present which underlines the importance of conserving the bases for the future, but it is only made possible through the generous donations of individuals and sponsor companies. The Trust operates from the United Kingdom with a small team of permanent staff and a Board of Trustees, and the Trust's patron is HRH *The Princess Royal*. We work closely with the British Government and the British Antarctic Survey and many other organisations involved in Antarctic Heritage in Britain and around the world.

Alongside our activities on the Antarctic Peninsula, we are also actively involved in fundraising for our sister charity the New Zealand Antarctic Heritage Trust, which is working hard to preserve the heroic era huts of Scott, Shackleton and Borchgrevink on the other side of Antarctica in the Ross Sea. We also support many other polar institutes in the UK and we are currently carrying out an ambitious Oral History project to collect and preserve first-hand testimonies from prominent individuals who have worked in the Polar Regions. As part of our ongoing education efforts we are also looking forward to establishing a lively outreach programme of lectures and events throughout the year to encourage public interest in our work.

These huts on the Antarctic Peninsula bear testament to the efforts of man to explore the richness of life on Earth and push the limits of what is humanly possible. They stand as the last vestiges of this period, and are evidence not only of the endurance and courage of those who built and worked in them, and the hardships they experienced, but of the minutiae of their everyday existence. Once lost, they are lost forever.

For more information about Antarctic heritage and details of how you can contribute to the Trust's efforts, please visit www.ukaht.org. The Trust relies heavily on donations to continue its work, and all support is most gratefully received. ❑

Historical Depot in Antarctica: A Clarification

How many scholars of Antarctic expeditions noticed anything awry about the article on the Historical Depot discovery in the July 2011 issue of *The Polar Times* (p. 7)? Merlyn Paine, American Polar Society Development Committee member, spotted something right away: Her father was not mentioned in the story about the find of relics from the 1933–35 Byrd Expedition.

Photo by Jason Watson, courtesy of Antarctica New Zealand

Byrd party depot

To learn more about Merlyn and her remarkable background, visit *www.americanpolar.org* and click on "ABOUT APS/OFFICERS & GOVERNORS." To learn more about her father's role in the expedition, read Merlyn's book, *Footsteps on the Ice: The Antarctic Diaries of Stuart D. Paine, Second Byrd Expedition*, published by University of Missouri Press, 2007, and reviewed in *The Polar Times*, July 2007. The article in July 2011 *The Polar Times* implies that Cox was a member of the field party, presumably on the basis of a survey pole that had the name Cox burned onto the surface. However, here is clarification of the event in Merlyn Paine's own words:

"Admiral Byrd dispatched three major field parties the summer of 1934. The most far ranging was the three-man geological party, consisting of Quin Blackburn, geologist/leader and surveyor; Richard Russell, dog team driver and person in charge of camp logistics; and my father, Stuart Paine, lead dog team driver, radio operator and — importantly — navigator of the geological party, which first explored and mapped what is now known as Scott Glacier. There they named Mt. Weaver, the Mt. Howe group near to the South Pole, and numerous other mountains. The entire glacier was mapped by Blackburn and Paine on the descent. (Mt. Paine is near the top of the glacier near the La Gorce Mountain range.)

"The equipment found by the New Zealand team was found at Durham Point. Durham Point was named after my father's birthplace, Durham Point, in Durham, New Hampshire. On page 236 of *Footsteps on the Ice*, [my father] describes the leaving of the equipment at Durham Point, in the entry dated *'Dec. 22nd Sled meter – 1054.7 …At Durham Point left Dick's + my ice axe, one + a half pair crampons, stadia rod, tripod + a stake, beside beacon.'* "

Edgar F. Cox, in fact, was a carpenter and dairy herdsman at Little America II and was not a member of the three-man Geological Party. It is likely that Cox manufactured the survey pole for use in the field." — ***Merlyn Paine***

Due South

by John Splettstoesser, Antarctic Editor

The centennial anniversary of the attainment of the geographic South Pole by Roald Amundsen and Captain R.F. Scott is being celebrated during 2011-2012, with numerous commemorative events occurring as a result. Some events will have already occurred by the time you read this. There are many spinoffs in this series of anniversary events, and one of them is a subject with which I have been involved for some years — tourism.

Many American Polar Society members have participated in tourism, either as paying passengers or as lecturers and expedition leaders on tour vessels, shipborne tourism being the most common type. The year 2011 is also an anniversary year — the 20th since the founding of the International Association of Antarctica Tour Operators (IAATO) in 1991.

Details of how IAATO began is not published anywhere, but I can provide some information because I was there when it happened. Representatives of the tour operators active in Antarctica met annually at the NSF Office of Polar Programs for several years, as a means of informing OPP of their activities, most operators initially having U.S. bases. Seasonal operations were regularly discussed, with an objective of maintaining records of tourism numbers and other statistics, including issues that might impact science activities and, in general, to ensure that OPP remained aware of a quickly expanding tourism industry that had initially launched with one or two tour operators and two tour vessels in the 1970s.

It was at the 1991 OPP meeting that Jack Talmadge (OPP) and several others proposed that, because of the projected growth of the industry and additional operators, the companies should set competition aside and form a group that could act as a central organization and voice for the industry members, and in particular for Consultative Meetings of the Antarctic Treaty Parties (ATCMs). The OPP sessions were organized by Jack Talmadge, contact person at OPP for the tourism operators and, later, by Ms. Nadene Kennedy, who maintained tourism statistics for some years afterward and who continues to do so. Until this point, the few operators in Antarctic tourism had operated independently, without need for the cooperation that became common in later years with regard to ship scheduling, safety measures, specific environmental guidelines for wildlife, ship operations and other aspects of conducting activities that would satisfy clientele, protect the pristine environment and report to Treaty Parties.

Following that meeting at OPP, on the same day in 1991, representatives of seven companies met at Hotel Lombardy, 2019 I Street N.W., in Washington, D.C., where many of us were staying. Discussions among the companies related to the proposal from the OPP meeting and a need for a unified organization. We can thank Jack Talmadge for what followed that day in 1991. (Admittedly, it was perhaps a more productive meeting because it was held in the lounge/bar of the hotel!—Splettstoesser)

Discussion revolved around what to call this new organization and, finally, "IAATO" became the consensus among all attending. Seven companies thus became charter members. (Today, in 2011, the membership has grown to more than 100 and includes not only ship operators, but also land operators, ship agents, travel agents, tourism bureaus, government offices, travel companies, conservation organizations and expedition management companies.) A press release was issued on 18 August 1991 by the newly formed IAATO office in Seattle, which was also the office of Society Expeditions, one of the charter members. A compilation of bylaws was begun soon after as a means of stating the organization's objectives and terms of operation for members.

Tourism was represented at the Antarctic Treaty Consultative Meeting in Bonn, Germany, in 1991. I attended as a member of the U.S. delegation (IAATO had not yet caught the eye of Treaty Parties, so did not merit its own delegation). I was also at the next ATCM, held in Venice.

The first formal IAATO delegation was invited to ATCM in Kyoto, Japan, where a most significant Recommendation was enacted by the Treaty parties: Rec. XVIII-1, a formal set of guidelines for tour operators and tourists. It was drafted by Treaty parties with input from Darrel Schoeling (U.S. delegation) and me (as the sole delegate for IAATO). An earlier, and similar, set of guidelines originated from Lars-Eric Lindblad, the founder of tourism in Antarctica, when he brought the newly built ship Lindblad Explorer to Antarctica in 1970. Guideline improvements were drafted later by Victoria Underwood at Society Expeditions. Because of the multi-nationalities of passengers and crew, that Recommendation has been translated by IAATO for distribution not only in English but also in Spanish, French, Russian, German, Japanese, Italian, Chinese and Dutch. Tourist nationalities include U.S. (37 percent), Australian (10 percent), U.K. (8 percent) and German (7 percent) with a variety of other countries comprising the remaining 38 percent.

In time, more regulations were developed, all of which enhanced the status of IAATO among the Treaty parties as a reputable and responsible manager of tourism in Antarctica. My feeling is that the recognition still applies.

Following are some statistics and projections about IAATO, many of which you can find by accessing the IAATO website at http://iaato.org, where you can peruse the content of Information Papers presented at the various ATCMs; a tally of nationalities of passengers, staff, and crew on tour ships; a list of ships and yachts scheduled for the 2011–12 Antarctic season (with their passenger capacities); and the numerous guidelines that cover topics such as wildlife watching, guarding against the introduction of alien organisms, and statistics for much of IAATO's existence. You may note with interest a table that lists 1992–93's tourism season as having only 10 operators, 12 ships/yachts, 59 voyages and 6,704 landed passengers. Compare this with figures for the recent 2010–11 season: 41 operators, 47 ships/yachts and 19,065 passengers landed. An additional figure, part of the statistics for several years now, indicates the number of large ships that were cruise-only, with no landings. The

recent season lists 14,373 passengers who saw Antarctica (Peninsula only, in this case) from the decks of these large ships, totaling more than 33,000 tourists visits in 2010–11 (a decrease of 8.3% from the previous year).

A total of about 25,000 visitors are projected for the 2011–12 season. Some of the decrease is as a result of several large ships not returning because of a heavy-fuel ban in the Antarctic Treaty area. This, plus the current world economies in several countries, might be a reflection of what the industry can expect in the near future.

Where do tourists visit in Antarctica? Antarctic Peninsula is most popular by far, with a major gateway port at Ushuaia, Argentina. Overall, visits are concentrated at about 35 sites, with less than 10 sites receiving around 10,000 visits in a tour season. Among them is Port Lockroy, the site of a former British base from the 1940s, which has been converted by the U.K. Antarctic Heritage Trust into a restored modern facility that receives more visits than any other site in Antarctica. An article by the Trust is included in this issue (page 16), along with a photo of Port Lockroy. Additional tour vessel attractions include the famous Lemaire Channel, where Una Peaks rises in all its splendor (see back cover). Lemaire Channel is a seven-mile-long narrow channel between high-rising peaks, with a southern latitude of just over 65°S, often a record for some tour vessels. Una Peaks is named for Una Spivey, former secretary for the Governor of the Falkland Islands in the 1940s, with an office in Stanley.

Now you have adequate background as a start for a visit to Antarctica! Plan your trip soon if you haven't already begun to do so. We need "Antarctic ambassadors" who will support the need to protect this polar region's environment, and the best way to become an Antarctic ambassador is to go there and experience it for yourself. And like many tourists, you may find that one visit to this expansive continent simply is not enough.

In a future column I will discuss the visitor who is brought to the interior of Antarctica by private company aircraft and experiences adventure tourism by skiing to the South Pole, visiting emperor penguin colonies, and climbing the highest peaks in Antarctica. ❑

Antarctic Notes

Airmen Successfully Medevac Antarctic Worker
***Pacific Air Forces Public Affairs*, 1 July 2011** — Utilizing night vision equipment, a C-17 Globemaster III and crew from Joint Base Lewis-McChord, Washington, alongside aeromedical evacuation and Critical Care Air Transport Team Airmen, successfully evacuated an ailing Antarctic government contractor June 30 to Christchurch, New Zealand. The contractor received in-flight care, and upon arrival in Christchurch, was transported to a local hospital for further treatment.

Maersk Line, Ltd Wins Ice-Strengthened Tanker Charter
***Maersk Line, Limited*, ARLINGTON, Va., 1 July 2011** — Maersk Line, Limited (MLL) has been awarded a long-term charter of an ice-strengthened tanker to support the U.S. Navy's Sealift Command. The U.S. flag vessel will be able to deliver fuel worldwide and is expected to serve the research center in McMurdo Station, Antarctica, and Thule Air Base, Greenland. The award will add a fourth vessel to MLL's fleet of modern U.S. flag tankers. The time charter will begin in November 2011, and consists of a one-year base with four options. The charter will last 59 months if all options are exercised. The total contract value, including all options and excluding reimbursable expenses, is $71.5 million.

Sir Edmund Hillary's Widow Defends Trying to Sell Watches
***STUFF.CO.NZ*, 7 June 2011** — Lady June, widow of Sir Edmund Hillary, tried to sell Hillary's watches at auction in Switzerland last year, creating a rift between her and his children, Peter and Sarah. His children won a High Court injunction last year that prevented the watches from leaving the country. The watches, valued at $25,000, include an Oyster Perpetual watch presented by Rolex to Sir Edmund after his climb of Mt. Everest in 1953, which he wore when he arrived at the South Pole on January 4, 1958. Lady June said the proceeds of the auction would go to the Himalayan charity that Sir Edmund established, but his children claimed that she intended to become enriched by the sales. His children intend to recover the watches and put them on display in an Auckland museum.

Kazakhstan Expedition to the South Pole
***Tengri News*, 8 June 2011** — The first Kazakhstan expedition to the South Pole was scheduled for departure in November 2011, with arrival at the Pole on 16 December, when the country's flag will be placed. The expedition will drive Toyota vehicles from Novolazarevskaya Station (Russia), vehicles that proved themselves in 2010 in a Russian car expedition to the Pole. The initiative is planned to coincide with the 20th anniversary of Kazakhstan's beginning, and will include 8–10 people — geologists, geographers, and chemists, with an objective to examine snow and ice for the presence of foreign material. The Kazakhstan Geographic Society's board of trustees solicited support for the expedition, along with Kazakhstan businessmen.

Antarctic Ice Loss Depends on How It is Measured
***Science*, v. 333, p. 401, 22 July 2011, by Richard A. Kerr** — "As shrinking ice sheets raise sea level, estimates of how quickly the frozen continent is losing and gaining ice remain slippery," states the author of this short note. A new reanalysis by two NASA scientists of the three standard ice-monitoring techniques reduces the estimated loss from East Antarctica, challenging losses reported lately for the continent as a whole. With the new study, scientists disagree whether Antarctica is losing roughly 50 billion or 150 billion tons of ice annually, while something like 2,400 billion tons of snow falls there each year. The three techniques include (1) altimetry measurements, in which laser or radar signals are reflected off the ice to measure its height and thus its volume. The gravity method (2) employs two satellites flying over the ice to measure mass directly. An input-minus-output method (3) works by subtracting ice flow into the sea from total snowfall. The latter is particularly difficult to gauge. Glaciologists H.J. Zwally and Mario Giovinetto reassessed published altimeter and gravity estimates, and also recalculated earlier input-minus-output estimates, and published results online in *Surveys in Geophysics*, 13 May 2011. Results of sea-level rise from Antarctic ice loss based on all three methods clearly show that the combination of all three methods has less ice loss than single-method estimates.

New Underwater Volcanoes Discovered in Antarctica
***Nature, Science*, 12 July 2011** — Scientists from the British Antarctic Survey have discovered several previously undiscovered underwater volcanoes around the South Sandwich Islands in the south Atlantic Ocean. The string of some 11 existing islands of the group form an arc with a deep trench on one side that signifies a subduction process that produced the islands, and presumably the underwater ones as well. Twelve new ones were found — one of them up to 3 km in height — and seven active ones. The island chain is part of British Antarctic Territory, now under the government of South Georgia. All islands are north of 60°S latitude, the northern boundary of the Antarctic Treaty coverage, and many are active volcanoes, including Zavodovski, home of a large colony of chinstrap penguins.

Christchurch Airport Buys International Antarctic Centre
***The Press*, press.co.nz, 20 November 2011, by Alan Wood** — Private owner Richard Benton has owned the International Antarctic Centre at the Christchurch airport for 11 years and has sold it to the airport, which has plans to introduce non-aeronautical attractions and revenue. The airport is owned 75 percent by Christchurch City Holdings Ltd, and 25 percent by the Government. Christchurch and its airport provide a gateway port for scientists and others who head south to Antarctica, thus depending in part on tourism. Declining tourism in Canterbury as a result of the February 22 earthquake has taken its toll on this activity, as well as a downsize in local economy. The Centre will continue much as it has previously with continuation of its employees.

South Pole Dome in Place at Seabee Museum
***Antarctic Sun*, 29 July 2011, by Peter Rejcek** — The upper part of the dome that was once erected at the U.S. station at the South Pole and dismantled later was recently erected in the Seabee Museum, Port Hueneme, California, completing a restoration project that began when the dome, commissioned

Continued on page 20

Continued from page 19

at the South Pole on 8 January 1975, was removed to make way for a new station that was dedicated on 12 January 2008. Individuals active in the process at the Seabee Museum included Lee Mattis, civilian project officer for dome construction, John Perry, retired Navy officer whose time in Antarctica included wintering in 1968, and Jerry Marty, civilian contractor with Holmes & Narver, who was active for many seasons in the construction of the present station. The Seabee Museum will include a number of relics from the history of the Seabees in Antarctica, including the console for the PM-3A nuclear power plant that provided power for McMurdo during the years 1962–1972 before being dismantled. The rest of the dome components from the South Pole station will remain in storage at Port Hueneme.

Fuel Regulations Send Antarctic Cruise Costs Up

***Telegraph Media Group Ltd*, 22 July 2011, by Caroline Shearing (updated)** — As of 1 August 2011, cruise ships operating in Antarctica faced a regulation by the International Maritime Organization that banned from burning or carrying heavy fuel oil and must instead use marine gas oil, which is cleaner but considerably more expensive. The change prompted some cruise lines to withdraw from the region, and visitor numbers for Antarctic tourism dropped as expected. The ban reduced the number of voyages next season available aboard larger "cruise-only" ships, those carrying more than 500 passengers, with no opportunities to go ashore, said Steve Wellmeier, Executive Director of the International Association of Antarctica Tour Operators (IAATO). Two cruise lines continued their cruise-only voyages, but four others dropped Antarctica from their brochures. Smaller expedition ships almost exclusively use light marine gas oil, which is less harmful than heavier fuels and dissipates quickly in water, posing less environmental damage in the event of a leak.

Air Content in the Larsen Ice Shelf

***Eos*, v. 92, no. 30, p. 256, 28 July 2011** — The surface elevation of the Larsen Ice Shelf has decreased by about 0.1 meter per year since 1992, caused either by an increase in the density of firn (compacted snow) at the surface or by an increase in melting of ice at the base of the ice shelf. Attributing this decrease to one of these causes would indicate whether atmospheric or ocean warming is affecting the ice shelf. Using British Antarctic Survey aircraft, Paul R. Holland *et al.* used airborne radar measurements to map variable air contact in the snowpack and found that loss of air could account for the observed lowering of the surface, although it is unknown whether a contribution from melting at the base might also be a factor. Results were published in *Geophysical Research Letters*, v. 38, L10503, 2011.

NZ's Fishing Threatens Ross Sea

***Stuff.co.nz*, 26 July 2011, by Michael Field** — Industry fishing by New Zealand is threatening the future of the Ross Sea, according to biologist David Ainley, writing in the journal *Pacific Ecologist*, Winter 2011. Ainley said New Zealand is the largest fishing nation taking toothfish (*Dissostichus mawsoni*), a late-maturing slow-growing, long-lived species that can grow to as much as two meters long and bring about US$70 a kilogram. Ainley cited statistics from CCAMLR to show that of the 3617 tonnes per annum of toothfish taken from the Ross Sea, New Zealand took 1,301 tonnes, the largest single nation involved. He said that a million of these large predatory fish are now gone, along with the 1,000-year-old sponges that are ripped up in the long-lining process. Fishing is changing the Ross Sea ecosystem containing 38 per cent of the world's Adélie penguins, 26 per cent of the world's emperor penguins, and 30 percent of the world's Antarctic petrels. Ainley has created a website, "lastocean.com," in an effort to pressure New Zealand to stop toothfishing and to endorse a marine protected area in the last intact marine ecosystem on earth.

Antarctic Ice Shelf Damaged by Japanese Earthquake

***THE INQUISITR*, 14 August 2011, by Steven Hodson** — Scientists at NASA have discovered that by looking at before and after satellite images that the Japanese earthquake in March 2011 had enough force that the waves caused icebergs to break loose from the Sulzberger Ice Shelf (77°S, 148°W, east of Edward VII Peninsula), some 8,000 miles away, 18 hours after the quake. About 50 square miles of ice broke away, forming several icebergs, the largest about the size of the island of Manhattan. Imagery from 1965 showed the ice shelf to be intact for nearly 46 years. A minimal amount of sea ice might have made the ice shelf more vulnerable to the disturbance.

Icebreaker Deal to Keep Antarctic Research Afloat

***Science*, 2 September 2011, p. 1204** — For the past 5 years, NSF has used the Swedish icebreaker *Oden*, to cut a channel to resupply McMurdo Station, including delivery of diesel fuel needed to support research throughout the continent, but in July 2011 the Swedish government decided to keep the ship at home next winter (*Science*, 19 August, p. 927). In a letter from Dr. Karl Erb, Director of the Office of Polar Programs at NSF, it was reported that a contract was agreed on for the services of the *Vladimir Ignatyuk*, a diesel-powered Russian icebreaker owned by the Murmansk Shipping Co. The ship is a sister to Canada's *Terry Fox*. NSF's contract allows it to hire the *Ignatyuk* for an additional two austral summers if it performs well this year. That arrangement provides NSF with a backup in case the *Polar Star*, a heavy-duty icebreaker operated by the U.S. Coast Guard and now undergoing extensive renovations, is not ready for 2013–14.

King Crabs Have Come to the Antarctic Shelf

***LiveScience*, 7 September 2011, by Wynne Parry** — Appearing as a negative consequence of climate warming in the Antarctic, Prof. Craig Smith of the University of Hawaii at Manoa and colleagues reported a new population of king crabs estimated at 1.6 million that were discovered in the Palmer Deep, west Antarctic Peninsula. The species of crab, *Neolithodes yaldwyni*, is known to populate the Ross Sea, but the discovery in the Palmer Deep suggests that after millennia of being confined by the cold water of the continental shelf, the crabs can now cross it, thus threatening the animal life established on the seafloor of the shelf. The discovery and its interpretation were published in the *Proceedings of the Royal Society B*, Sept. 7, 2011; doi:10.1098/rspb.2011.1496.

Malaysia to Accede to 1959 Antarctic Treaty & Madrid Protocol

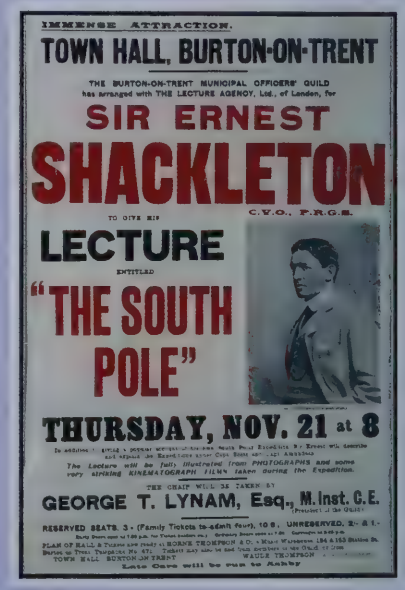
***Asian Scientist*, 30 August 2011** — Malaysia will become the 49th party to the Antarctic Treaty in a non-consultative status. Since 1959, 36 other countries have acceded, which means they may have delegations at Antarctic Treaty Consultative Meetings, but have no vote in proceedings. Acceding countries can, however, advance to Consultative (voting) status by conducting significant research in Antarctica, and in the case of Malaysia, 60 Malaysians have been involved in Antarctic research since 1997, starting at Scott Base. Most recent acceding countries were Portugal in 2010, Monaco in 2008, and Belarus in 2006. Consultative Parties total 28 to date, and 21 Acceding Parties after Malaysia joins. It is noted that 2011 is the 50th anniversary of the Antarctic Treaty in effect, as of June 1961.

Geoscience Professor Richard Alley Wins Heinz Award

***Collegian Online*, 26 September 2011, by Jaclyn Saumell** — Richard Alley, Evan Pugh Professor of Geosciences at Penn State University, is the recipient of a $100,000 unrestricted Heinz Award for being a leader in climate and polar ice studies. His career has included some 30 grants from the National Science Foundation as Principal Investigator or Co-Investigator since 1986. His work on Greenland ice cores showed that periods of warm vs. cool periods were unusually short in time, indicating that Earth's climate and temperatures can produce rapid changes. His present focus is on the West Antarctic Ice Sheet and ice coring that has reached the bottom of the ice sheet.

China Adds New Icebreaker For Polar Work

***China Daily*, 4 November 2011** — China has conducted 27 Antarctic expeditions since 1984, and only four to the Arctic. China's current icebreaker, *Xuelong*, was purchased from Ukraine in 1993, and has a service life span of about 30 years. It currently has only one working engine, which poses a risk whenever it is on active duty. It is due for a technological upgrade in 2013 that will extend its service life another 15 to 20 years. The new icebreaker, scheduled to start service in 2014, will improve China's capability in polar research. China's Great Wall station was opened on King George Island in February 1985, and Zhongshan Station, China's second, opened in January 1989 at Larsemann Hills. In 2005, Chinese scientists worked at Dome A, the highest point on the East Antarctic plateau, and in February 2009, Kunlun Station was opened near Dome A at an elevation of 4,087 meters above sea level. China began research in the North Pole area in July 1999 on *Xuelong*, and in July 2004 opened a new station on Svalbard. ❑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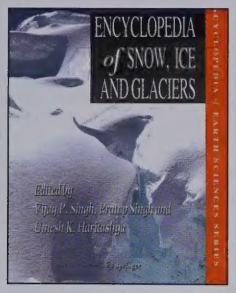
Book Reviews



Encyclopedia of Snow, Ice and Glaciers

Edited by Vijay P. Singh, Pratap Singh, and Umesh K. Haritashya
(Springer, 2011, 1253 pp, Hardcover, $549)
ISBN: 978-90-481-2641-5

Reviewed by John Splettstoesser

The objective of *Encyclopedia of Snow, Ice and Glaciers* is to present the current state of scientific understanding of various aspects of earth's cryosphere — snow, glaciers, ice caps, ice sheets, ice shelves, sea ice, river and lake ice, and permafrost — and their related interdisciplinary connections under one umbrella. (from the Preface, p. xli). Several entries are also timely with respect to evidence related to effects of climate changes on the world's glaciers. The importance of selected subjects appears with an index search —"Climate Warming" has 27 pages noted in the index, "Global Warming" has 16.

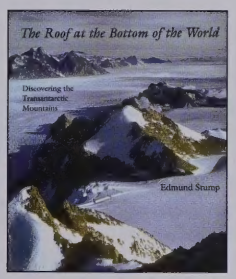
In addition to the book, the book is impressive for many reasons — its weight for one (8 pounds, 5 ounces [3.77 kg])), but also its organization of topics in alphabetical format, from "Ablation Depression" to "Younger Dryas." Articles are arranged under three categories, A, B, and C, as shown in Tables 1, 2, and 3 (p. 1233-1237). Category A includes 64 articles representing major divisions and review topics, and aloo serves to coordinate the widely scattered entries of categories B and C. Category B articles constitute building block items, and Category C articles are mini-entries dealing with materials, fancy terms, or outdated concepts. The 263 contributors (representing "Who's Who in the Cryosphere") have affiliations from 23 countries, with most authors being from the U.S. (78), U.K. (39), India (32), and Canada (30). Considering the abundance of glaciers and related features in Russia, there are no Russian authors represented in the book.

Could anything possibly be missing? Only because of ongoing events in field work and advances in results reaching the literature world. Glaciers worldwide receive some mention as to their history of exploration and relevance, in some cases, to current conditions of retreat. More recent events in ice-core drilling and sampling of glaciers did not make the content — for example, Lonnie Thompson's team at Puncak Jaya, Papua, Indonesia, in 2010, site of one of the last near-tropical glaciers in the world.

Some articles are extensive reviews of subjects, such as "Global Outlook of Snowcover, Sea Ice, and Glaciers," by Mauri Pelto, p. 462–468, whereas others are a page or less, such as "Geocryology," by Amit Kumar, which consists of only nine lines in one paragraph, plus a reference. If the reader does not find what is being searched for in the article, cross-references at the end of the article lead to related terms. Some terms might appear to be missing, but a look at the Subject Index (p. 1241–1253) will most likely provide the answer. There is no entry in the alphabetical listing of articles for "Sastrugi," for example, but the index leads the reader to pages 27 and 72, where it is discussed under related topics. Contributors and affiliations are listed on p. xxi–xl, and Author Index is on p. 1239–1240.

The objective of the book, as stated in the Preface, is indeed a tall order, but the editors and authors of 463 articles have done a major task in providing a reference for all levels of undergraduates and graduates, as well as for geologists, geographers, climatologists, hydrologists, and many other relevant users.

This publication is also available in electronic format — eReference (online access), ISBN: 978-90-481-2642-2, $549, and in a print and electronic bundle under Print+eReference (book + online access), ISBN: 978-90-481-2643-9, $689. The 1,253 pages of contents include 659 illustrations, 428 of them in color. Libraries, scholars and researchers of the subjects will certainly value the book in their reference collections.



The Roof at the Bottom of the World: Discovering the Transantarctic Mountains

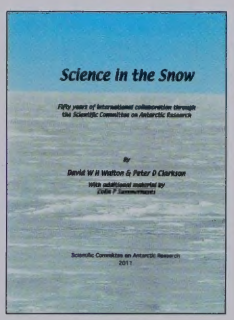
by Edmund Stump
Yale University Press, 2011,
xviii + 254 pp., $29.95 hardbound
ISBN 978-0-300-17197-6

Reviewed by John Splettstoesser

The author has done something with the subject of the Transantarctic Mountains, its geology, photography, and expedition history that no one has done before him. He has put it all together in one book that one might call a photo atlas of the TA Mountains, an achievement that is unique because no one else has visited, conducted geologic investigations, and photographed essentially all of it over a period of some 40 years. He has done considerable research into discoveries of past expeditions in the area, narrating the explorers' experiences and observations in a style that puts it in perspective as not only in a story-telling style but also scholarly.

Ed Stump is a Professor of Geology at Arizona State University, and it is obvious when reading the book that he is also an explorer, mountaineer, and photographer. He has selected key photographs of many thousands in his collection to illustrate geologic features, glaciers, and routes of previous explorers with markings on photographs, so you can see just where Roald Amundsen found his way up the Axel Heiberg Glacier on his route to the Geographic South Pole in December 1911; where Ernest Shackleton found the route up the highly-crevassed Beardmore Glacier in 1907 to the Polar Plateau, only to reverse course and return to base because of dwindling supplies; and where Captain Scott followed the same route and succeeded to reach the Pole in January 1912. History is everywhere in this book, along with spectacular photographs of Ed's favorites to tell the story. Sidebars have personal anecdotes and narratives of notable events in Ed's years in this special place. The 'Ascent of the Spectre' (p. 199-201), a solitary peak in the Organ Pipe Peaks, next to Scott Glacier, is especially worth reading because of the climb that Ed did with his brother, Mugs, who accompanied Ed that season. Whether Ed has finished his work with his beloved TA Mountains depends on his answer when you ask him. Most recently, he was Chief Scientist at a helicopter-supported field camp in the area in 2010-11, so he might have his sights on filling in gaps to complete the total picture of the geology and photography of the TA Mountains….. but I doubt if many gaps exist for him.

Color is a definite advantage in reproduction of photos and the routes marked to show presence of previous explorers, as well as reproductions of many of their maps. A glossary of terms, a Bibliography, and an Index complete the book. The book provides a vital guide for anyone continuing to work in the area in the future, and also for armchair travelers who want to curl up with a book to read about the adventures of a seasoned geologist and the places he has been and photographed. Whether you are a geologist, historian of Antarctic expeditions, or a follower of adventure, this is the book for you.

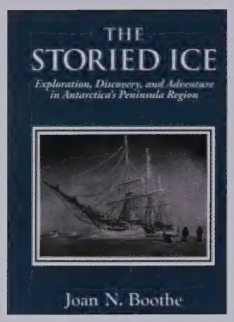


Science in the Snow: Fifty Years of International Collaboration Through SCAR

by David Walton and Peter Clarkson
Cambridge, U.K., SCAR, 2011,
258 pp, paperback

Reviewed by John Splettstoesser

The Scientific Committee on Antarctic Research has grown through its inception in 1958 to become a major leader in the coordination of research conducted by Antarctic Treaty Parties. An in-depth review of this overview of SCAR's principal activities will be provided in a later issue of *The Polar Times* by Robert H. Rutford, former President of SCAR, 1998-2002. See SCAR website (http://www.scar.org/publications) for more information.



The Storied Ice: Exploration, Discovery, and Adventure in Antarctica's Peninsula Region

by Joan N. Boothe
Berkeley, Regent Press, 2011,
373 pp, $34.95, hardbound

Reviewed by John Splettstoesser

Despite the great number of Antarctic books that are being published in this year of the 100th anniversary of the Amundsen-Scott "Race to the Pole," many of which I have seen and read and also reviewed in *The Polar Times*, my first thought on reading the book by Joan Boothe was whether the world really needed another book on Antarctica. The subject has been approached from every possible angle, whether scientific, specialized about penguins, glitzy photo books for coffee tables, and accounts of explorers and expeditions. Joan, however, has done a major service in producing an account of everything Antarctic, but in succinct prose with accompanying information that is often found scattered in various other books and articles. She has assembled just enough information about the subject, but has not overdone it with boring detail that is not really required. *The Storied Ice* is the only modern, comprehensive history devoted to the Antarctic Peninsula region, that part of Antarctica where 95% of Antarctic tourists go, but also where a large number of expeditions went in the early stages of the exploration of Antarctica, many of them decades before the era of those in the Ross Sea region.

Joan's experience and background in travel in Antarctica and her keen interest is well illustrated in the book, which makes it more appealing. It is easy to feel her enthusiasm about this remote part of the world, which spins off to the reader. The 19 chapters range from the initial search for the continent and its discovery to the time of the International Geophysical Year, 1957-58, the Antarctic Treaty of 1959, and following events. Appendix A: Antarctic Timeline, puts events into perspective with those in the Antarctic Peninsula region, other parts of Antarctica, and events elsewhere. For example, this novel approach to Antarctic history lists 1914-16 Shackleton's ***Endurance*** expedition in the Peninsula column, along with Amundsen and Scott's expeditions in 1910-12 in a second column, plus a note for 1912 in 'Events Elsewhere' for 'Alfred Wegener proposes theory of continental drift,' a unique way of tying Antarctic events together with world history elsewhere. Appendix B: Antarctic Firsts, lists many I had not read anywhere else, but some that are noteworthy and never to forget. … The first child born in Antarctica, January 7, 1978, at the Argentine base Esperanza. A glossary of terms follows, then an exhaustive 'Literature Cited' (p. 349-360), not surprising considering the detail researched for the book, and then an Index (p. 361-372). There is no doubt that Joan has done her work to assemble information that will be in great demand for Antarctic historians and many others. ❑

Obituaries

Andrei Kapitsa

Andrei Kapitsa, renowned physicist at Moscow State University, participated in four Soviet Antarctic expeditions from 1955 to 1964, died 2 August 2011. He was the first to suggest the presence of Lake Vostok on the basis of data obtained by Antarctic expeditions, and also applied the name to the lake. Lake Vostok lies under 4,000 meters of ice beneath Vostok Station (Russia), and is about the size of Lake Ontario… 250 x 50 km, with an area of 15.5 thousand square km, and is 1.2 km deep. As of mid-2011, the bottom-most 50 meters of the East Antarctic ice sheet had not been drilled through to the lake, pending an approved method of doing so to sample lake water without contaminating it.

Stephen S. Barnes

Known in the day for reliable phone patches, Steve Barnes (KC4USB, K0YKJ, KH6SB, etc.) passed away on 10/10/10 after two years of radio blackout in hospice care. Steve was born 11 April 1915, and died at age 95 in Boulder, Colorado. He was Station Scientific Leader at Byrd Station in 1958. Steve was a renowned ionosondist, which was his area of research at Byrd, beginning this life-long profession at Palmyra Atoll in the Pacific. Settling in Boulder, he also was the NBS Antarctic Coordinator, serving the many scientists with phone patches. He was recognized by the U.S. Navy for his many years of volunteer work in supporting morale. Steve first became a ham radio amateur at age 15, and enjoyed the avocation for 80 years. He was a champion baseball pitcher, a baseball career that was interrupted by family and WW II where he served on the heavy cruiser *Los Angeles*. His last term of service was at the Maui Ionosonde Station. Steve is honored with the geographic feature Barnes Ridge in the Sentinel Range, Ellsworth Mountains. (From information provided by Steve's son-in-law Michael Maish (Byrd 67, Vostok 69).)

Bill Bailey

Bill Bailey, born Roy Bailey, died at age 88. He had a long career in radio research, beginning in the second world war. He and others constructed a radar used to examine the ionosphere, which took him to Port Stanley, Falklands Islands, in 1947, to run the ionospheric measuring station. While there he visited Port Lockroy on the Antarctic Peninsula, spending several weeks at the base run by the Falkland Islands Dependencies Survey (FIDS, later British Antarctic Survey). – Ellis Logan, *The Guardian*, 16 May 2011.

Arthur L. Herr, Jr.

Arthur Herr spent 22 years in the U.S. Navy, and passed away at age 79 on June 28, 2011, in Bartlett, Tennessee. He was a pilot with VX-6 in 1962-65 and VXE-6 in 1972-75, the latter on radio-echo sounding flights in Antarctica on projects by Scott Polar Research Institute and the National Science Foundation. He flew a variety of aircraft, including P2V Neptune, V-18 Otter, and LC-130 Hercules. As a Lieutenant, He was co-pilot on the record-setting nonstop flight on September 30, 1963, from Cape Town to McMurdo, consisting of 14.5 hours in the air and a distance of 4,700 miles. After a stop at McMurdo, the plane went on to New Zealand. The flight is part of the story "The Last Great Flights," that appeared in *National Geographic*, March 1964. Mount Herr (1,730 m) is named for him, located at 85°45'S, 149°32'W, near Mount Gould in the Tapley Mountains, part of the Queen Maud Mountains.

Sister Mary Odile (Margery) Cahoon

Sister Mary Cahoon was born in Houghton, Michigan, July 21, 1929, and died on October 2, 2011, at the age of 82 at the St. Scholastica Monastery, Duluth, Minnesota. She spent many summers participating in research in the U.S. and abroad, with perhaps her most memorable experience joining her co-researcher Dr. Mary Alice McWhinnie of DePaul University, to spend nine months wintering at McMurdo Station, Antarctica, in 1974. They were the first two women scientists ever to spend the winter in Antarctica. Their research project was titled "Metabolic Studies of Cold Resistance of Invertebrates and Fish in Antarctic Waters."

Geoffrey Lee Martin

Geoffrey Lee Martin, journalist, author, explorer and business man, covered Sir Edmund Hillary's overland journey to the South Pole as part of the historic Commonwealth Trans-Antarctic Expedition in 1957-58. On January 20, 1958, Dr. Vivian Fuchs and Hillary met at the South Pole amid a certain amount of controversy. It had been intended that Fuchs be the first to reach the pole, but Hillary and his tractor-driven support team decided to make an audacious and 'hellbent' dash for the Pole, beating Fuchs and his team on their more sophisticated Sno-cats. The drama of this historic event is the subject of Martin's book, *Hellbent For the Pole: An Insider's Account of the 'race to the South Pole' 1957-58,* published by Allen & Unwin in 2007. Martin passed away on October 16, 2011 at age 83 in Sydney. ❑

Frank G. Stokes, Former APS Secretary

Francis G. Stokes, Sr., age 78, Capt. USN (Ret.), passed on September 28 2011. A 1955 graduate of the United States Naval Academy, he wintered over at Little America in Antarctica on Operation DeepFreeze (1957-58) during the International Geophysical Year. He was elected a fellow of the Explorers Club of New York City, and served as a board member of The Planetary Studies Foundation and The Polar Society. Prior to his retirement as a Captain, USNR, he was Commanding Officer of a Navy Reserve unit at Great Lakes, and lectured on geopolitics for the CNO's Task Force. A former longtime resident of Park Ridge, IL, he served as President of the Library Board and nation chief of the Indian Guides. In spite of his many successes, his proudest accomplishments were his children and the many travels and adventures they shared.

Letter from Membership Chair

Greetings from New England! Fall is under way here in mid-coast Maine (we even had snow for Halloween!) so that means it is time for the annual American Polar Society membership renewal notices to be written, printed, folded, stuffed, sealed, stamped and sent. Thirty-eight foreign members and 447 U.S. members were sent renewal notices for 2012. You should have received yours by now if your membership expires in 2011. Many renewals are being completed online through our new PayPal feature (visit www.americanpolar.org (note, ".org," not ".com").

We thank you for utilizing this new way to update your membership with us. As more and more members make use of this new process, the APS will realize even greater savings in our postage and processing costs. We have also seen an uptick in new members coming aboard via the PayPal feature. Thank you!

We also continue our quest to collect updated email addresses from our membership, for ease in communications. The last time we tried a mass email message, however, many were bounced back. So please take a moment and update us with your current email and other contact information.

We would like to recognize and welcome the following new APS members who have joined our ranks this year. Likewise, we hold in remembrance many of our members and others in the polar community, of whom we have been notified, who have passed away in the last year. If you are aware of others, please let us know.

As always, I thank you for the opportunity to serve as your membership chair.

Charles Lazerbom

Membership Chair, APS

New Members

Jamie A. Dillon (San Diego, CA) Dec 2010
Gary Montemayor (San Diego, CA) Dec 2010
Will Steger (Minneapolis, MN) Jan
Bill Gasperini (Roslindale, MA) Jan
Anthony Wells-Stubley (ENGLAND) Jan
The Elkus Family (Poway, CA) Jan
Mark A. Deckard (York, PA) Jan
Larry L. Johnson (Aloha, OR) Jan
Raymond Arnaudo (Falls Church, VA) Jan
Oneil P. Boudreaux (Saint Louis, MO) Feb
Ronald Smith (Saint Louis, MO) Feb
Warren S. Cresswell (New York, NY) Feb
Neal Brown and Fran Tannian (Fairbanks, AK) March
Daniel A. Kobal (Riverdale, NY) March
Mary R. Albert (Norwich, VT) March
Shelly Sommer (Boulder, CO) March
Ken Tape (Fairbanks, AK) April
John J. Kriz (New Canaan, CT) May
Donald Howell (AUSTRALIA) May
Audrey Mills (Castle Rock, CO) May
Katherine Krause (Glen Ellen, CA) May
Stephen Evans (Stafford, VA) July
Jim Clash (NY, NY) July
Rusty Dorr (Andes, NY) July
Peter Rejcek (Denver, CO) August
Penelope Rithner (Denver, CO) August
Walter Bauer (Columbus, OH) September
Warren Salinger (Gold Canyon, AZ) September
Harry Holcomb (Franktown, VA) October
Jenny E. Ross Photography (Truckee, CA) October

New APS LIFE Members

Capt Alfred S. McLaren (Nederland, CO)
Avery Rusell (Nederland, CO)
Daniel Bennett (San Antonio, TX)
Denise Landau (Carbondale, CO)
Charles Swithinbank (ENGLAND)
Polly Penhale (Washington, DC)
Earl B. Frederick (Parksley, VA)
John McLaren (Brighton, MI)
Oran Young (Santa Barbara, CA)
Gisela Dreschhoff (Lawrence, KS)
Harriet J. Hobbs Cresswell (Truro, MA)
Edward F. Steinfeld (Stow, MA)
Jeffrey Garrett (Mercer Island, WA)
George P. Steele (Pittsboro, NC)

APS members and those of the polar community in Remembrance:

John H. Dearborn
Lloyd Beebe
Jack Child
Zenya Taniguchi
J. Thomas Dutro, Jr.
Janet Schulenberg
Anders Tengelin
Hugo Neuburg
Bess Balchen Urbahn
Ralph Myerson
Warren B. Cook, Sr. ❑

About Our Front Cover

The Tusk is a 600-foot horn of pure marble – Mount Fridtjof Nansen is in the distance, above Liv Glacier. ❑ Photo by Ed Stump

About Our Back Cover

Una Peaks, Cape Renard, northern entrance of Lemaire Channel, popular on itineraries for Antarctic tour vessels. Named for Una Spivey, Secretary in the 1940s to the Governor, headquartered in Stanley, Falkland Islands. ❑ Photo by John Splettstoesser

Major Contributors This Issue

Billy-Ace Baker • Abel Shafer • Peter Anderson •

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Beaumont Manor "Beau" Buck

***Santa Barbara New-Press*, 8 October 2011** — A Naval officer, Arctic scientist and Texas gentleman, Beaumont "Beau" Buck was born in Port Arthur, Texas, on April 9, 1926. He passed away on August 22, 2011 in his favorite city of Santa Barbara.

Beau was a very proud native of Southeast Texas, an Eagle Scout and graduated from the Naval Academy in 1948. Beau resigned his commission as a U.S. Navy Lt. Cdr. in 1961 to work at GM-Defense Research Laboratory in Santa Barbara as head of Surveillance Section, Sea Operations Department.

Beau's career centered primarily on underwater environmental acoustics research supporting submarine detection systems and techniques in the Arctic Ocean and the Bering Straits. Starting in 1963 he and his crew pioneered, for the United States, the use of small manned ice camps. They established the first pack ice summer camp in 1971 and first U.S. ice camp in the Eastern Arctic (Greenland-Spitzbergen area) in 1977. This was a pilot experiment for the East Arctic Project. Beau participated in most of the U.S. submarine cruises to the Arctic, between 1960 and 1988. He led 35 scientific expeditions to the Arctic and sub-arctic during that period. He authored over 100 scientific papers on arctic acoustics, and also pioneered development and usage of ice-covered and open-ocean environmental data buoys using TIROS satellites.

He received a Navy Commendation medal (1960) for work at Ice Island T3 during one of the first U.S. submarine cruises to the Arctic. He was also awarded Honorary Membership in the American Polar Society (1977), one of only 30 people selected since 1934, joining such explorers as Admiral Richard Byrd, Dr. Vilhjalmur Stefansson and Dr. Lincoln Ellsworth. ❑